

ABSTRACT OF THE DISCLOSURE

The invention is intended to provide a control device for a vehicular AC motor, which has higher efficiency of voltage utilization in a power running mode and has higher efficiency of electricity generation in an electricity generation mode. The motor control device comprises rectifying devices and switching devices for three phases, which are connected between a DC power source and armature coils of an AC motor operatively coupled to an internal combustion engine. The motor control device has the inverter function of converting a DC power from the DC power source into an AC power and supplying the AC power to the armature coils, and the converter function of converting an AC power generated by the AC motor into a DC power and supplying the DC power to the DC power source. Rectangular-wave driving control of applying rectangular wave voltages to the armature coils of the AC motor is performed when the AC motor is operated for power running, and synchronous rectification control for making synchronous rectification of the AC power generated by the AC motor is performed when the AC motor is operated for electricity generation.